DEPARTMENT of ENVIRONMENTAL SERVICES
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake:	BAILEY POND	Lake Area (ha):	5.75
Town:	NEW BOSTON	Maximum depth (m):	5.8
County:	Hillsborough	Mean depth (m):	3.2
River Basin:	Merrimack	Volume (m^3):	181500
Latitude:	42°57'35" N	Relative depth:	2.1
Longitude:	71°41'00" W	Shore configuration:	1.29
Elevation (ft):	735	Areal water load (m/yr):	8.88
Shore length (m):	1100	Flushing rate (yr^{-1}):	2.80
Watershed area (ha):	106.2	P retention coeff.:	0.57
% watershed ponded:	0.0	Lake type:	natural

BIOLOGICAL:	1 March 1990	18 July 1989
DOM. PHYTOPLANKTON (% TOTAL) #1	SYNURA 99%	DINOBRYON 40%
#2		SYNEDRA 35%
#3		
PHYTOPLANKTON ABUNDANCE (cells/mL)		13350.0
CHLOROPHYLL-A (µg/L)		18.33
DOM. ZOOPLANKTON (% TOTAL) #1	KERATELLA 80%	KERATELLA 74%
#2		NAUPLIUS LARVA 11%
#3		POLYARTHRA 7%
ROTIFERS/LITER	1117	621
MICROCRUSTACEA/LITER	76	120
ZOOPLANKTON ABUNDANCE (#/L)	1270	752
VASCULAR PLANT ABUNDANCE		COMMON/ABUN
SECCHI DISK TRANSPARENCY (m)		1.5
BOTTOM DISSOLVED OXYGEN (mg/L)	6.5	0.3
BACTERIA (fecal col., #/100 ml) #1		< 10
#2		
#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 2.8
Hypolimnion volume (m^3): None

CHEMICAL:

Lake: BAILEY POND
Town: NEW BOSTON

	1 March 1990		18 July 1989		
DEPTH (m)	1.5	3.5	1.0		4.0
pH (units)	5.7	5.7	6.3		5.7
A.N.C. (Alkalinity)	2.7	2.9	2.1		3.7
NITRATE NITROGEN	0.05	< 0.05	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	0.48	0.53	0.78		0.92
TOTAL PHOSPHORUS	0.023	0.023	0.043		0.030
CONDUCTIVITY (μ mhos/cm)	45.9	46.2	33.2		40.1
APPARENT COLOR (cpu)	60	65	68		130
MAGNESIUM			0.39		
CALCIUM			2.0		
SODIUM			4.0		
POTASSIUM			0.30		
CHLORIDE	7	7	5		5
SULFATE	3	4	3		4
TN : TP	23	23	18		31
CALCITE SATURATION INDEX			4.4		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1989

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
**	4	4	4	12	Eutro.

COMMENTS:

1. The 4 meter sample was very green but there was no dissolved oxygen at that depth; the green color may have been caused by a green sulfur bacteria (Chlorobacteriaceae).

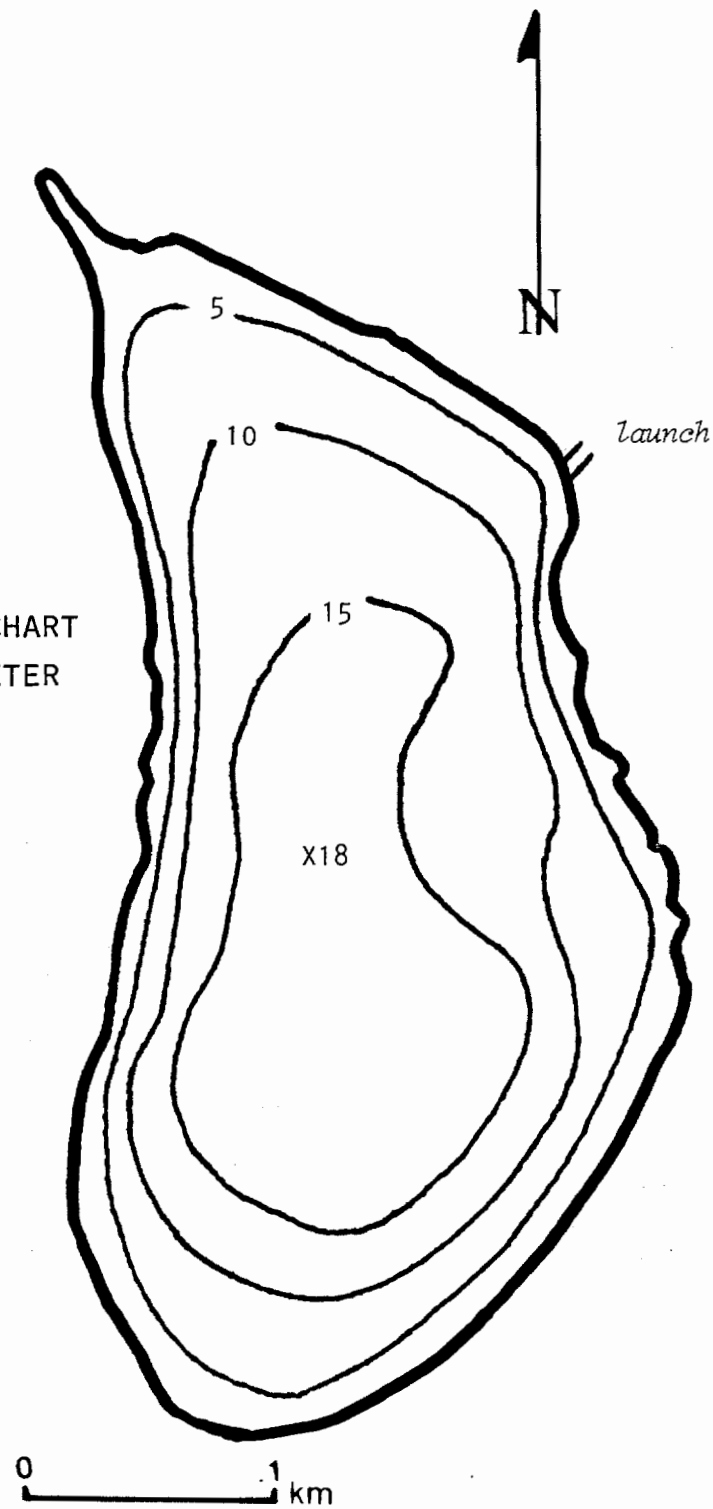
2. Good access to the pond.

3. No cottages located along the shoreline.

4. Greens (45%) and diatoms (30%) were the dominant classes of whole-water phytoplankton. The dominant genera were Chlamydomonas (30%) and Synedra (20%).

Bailey Pond

New Boston



ROUGH BATHYMETRIC CHART
SOUNDED BY FATHOMETER
DES - 1989

5 FT ISOBATHS

FIELD DATA SHEET

LAKE: BAILEY POND
DATE: 07/18/89

TOWN: NEW BOSTON
WEATHER: PARTLY CLOUDY & BREEZY; 80'S

	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	22.5	8.4	95 %
	1.0	20.9	8.4	92 %
	2.0	20.2	5.3	58 %
	3.0	14.0	0.1	1 %
	4.0	10.0	0.1	1 %
	4.5	9.5	0.3	3 %

SECCHI DISK (m): 1.5

BOTTOM DEPTH (m): 5.0

TIME: 1136

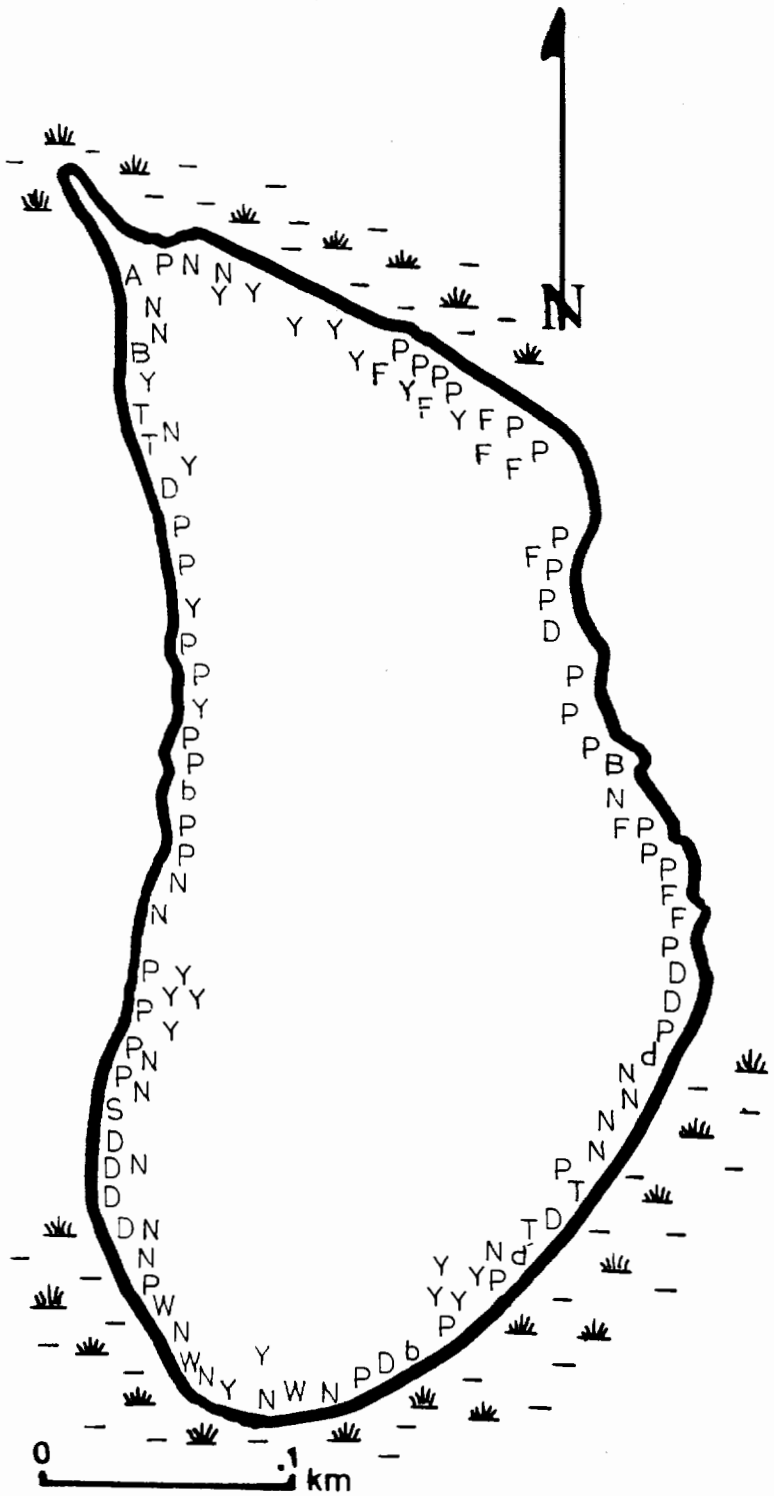
COMMENTS:

*Dissolved oxygen values are in mg/L

Bailey Pond

New Boston

AQUATIC PLANT
DISTRIBUTION



AQUATIC PLANT SURVEY

LAKE: BAILEY POND TOWN: NEW BOSTON DATE: 07/18/89

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
P	Pontederia cordata	Pickerelweed	Common/Abund.
N	Nymphaea	White water lily	Common/Abund.
b	Scirpus	Bulrush	Common/Abund.
Y	Nuphar	Yellow water lily	Common
D	Decodon verticillatus	Swamp loosestrife	Common
T	Typha	Cattail	Scattered
B	Brasenia schreberi	Water shield	Scattered
A	Peltandra virginica	Arrow arum	Sparse
F	Nymphoides cordatum	Floating heart	Scattered
d	Dulichium arundinaceum	Three-way sedge	Common
W	Potamogeton	Pondweed	Sparse
S	Sparganium	Bur reed	Scattered

OVERALL ABUNDANCE: Common/Abundant

GENERAL OBSERVATIONS:

1. An extensive wetland was around the entire southern end of the pond and along the northern shore.